virulence. In one such series, for example, sixteen (80 per cent) out of twenty rabbits injected with the initial filtrate died of emaciating diarrhea. In the fifth passage of this series, six (75 per cent) fatalities occurred in eight injections.

Rabbits recovering from the passage virus were tested serologically, 75 per cent of them showing relatively high titer typhoid agglutinins, while 25 per cent gave negative Widal reactions.

From experimental evidence of this type, Magrassi and Galli conclude that typhoid fever must be regarded as a synergic disease, the etiologic factor being the nonpathogenic typhoid bacillus in adherent symbiosis with a typhoid virus (Vi-antigen). Dissociated from the bacillus, the virus is able to produce nontyphoid enterocolitis by "activating" *B. coli* or other normal intestinal bacteria. The virulence factor is able to stimulate the production of typhoid agglutinins when grown in symbiosis with *B. coli.*

While the work of the Italian investigators has not yet been confirmed by American bacteriologists, their suggested "binomial" theory is in line with the newer knowledge of bacterial dissociation and virus synergism. If confirmed, their theory eventually may take its place as one of the most important basic contributions to medical science of the present generation. Most American bacteriologists, however, are skeptical of its confirmation.

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MAPHARSEN AS AN ANTISYPHILITIC ARSENICAL

Thirty years ago, Paul Ehrlich first synthesized and studied the chemical named amidophenoarsenoxid, otherwise known as arsenoxid, and commonly known today as mapharsen. Its use in human beings was not recommended at that time because he regarded it as highly toxic, and as possessing a lower chemotherapeutic index than arsphenamin. Mapharsen is a pure, stable chemical, which is readily soluble, and contains a low arsenical content (about one-tenth that of neoarsphenamin in comparable therapeutic doses).

On the basis of experimentation, Tatum and Cooper found in 1932 that mapharsen had a higher therapeutic index for syphilis in rabbits than any other syphilitic agent. This experimental evidence warranted its trial in human syphilis, and since then a great deal of literature has appeared, most of which agrees on the favorable effects of mapharsen on the various forms of syphilis.

In considering the value of mapharsen as an antisyphilitic agent, it is interesting to note the results obtained by Chargin et al. in the treatment of 188 cases of early syphilis with mapharsen and bismuth, as compared to results obtained by Stokes et al. in a series of 169 cases treated similarly, but with arsphenamin or neoarsphenamin and bismuth. In this series, satisfactory results with mapharsen were obtained in 84 per cent of the cases. This compares favorably with the 80 per cent satisfactory results noted with neoarsphenamin or arsphenamin.

Mapharsen is still an experimental drug, although admittedly it has had extensive clinical trial in the last eight years. To date it has apparently shown itself to be as effective an arsenical as neoarsphenamin in the treatment of the various manifestations of syphilis, as evidenced by the disappearance of spirochaetes from early infectious lesions, healing of early and late skin manifestations, reversal of serology, and prevention of syphilis in new-born infants. Although it probably will prevent the later complications (such as paresis, tabes, and cardiovascular syphilis) where adequately used, about twenty years must pass before this can be definitely stated.

To date, in over five million injections only two fatalities have been reported (Simon and Iglauer, Rein and Wise). This is much less than one would expect from neoarsphenamin. It has been particularly noted that instances of blood dyscrasias, severe or exfoliative dermatitis, liver damage, and other serious and at times fatal reactions occurring with neoarsphenamin are very rare. No case of nitritoid reaction due to mapharsen has been reported.

Some patients, however, cannot tolerate mapharsen without experiencing nausea and vomiting. Pain along the course of the vein and extending up the arm to the shoulder may also occur. While these are not serious reactions, they are disconcerting to the patient. Despite these minor reactions, it may be stated in brief that in view of its low toxicity, ease of preparation and administration, and the excellent results so far obtained, the further use of mapharsen as an antisyphilitic remedy is justified.

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Reports Inflammation of Skin After Wearing of Nylon Hose.—Four cases of dermatitis (inflammation of the skin) of the legs and thighs following the wearing of Nylon stockings made by one manufacturer are reported by S. J. Fanburg, M. D., Newark, N. J., in *The Journal of the American Medical Association.* In his preliminary report of the cases he says they "suggest that the dye or finish used in preparing the hose in question may have been a primary cutaneous irritant, while the Nylon itself is probably innocuous."

Patch tests made on the four women with undyed and unfinished Nylon were negative, he reports, whereas in all four cases strongly positive reactions to the finished product and the residue of an ether extract were obtained. Doctor Fanburg says that the E. I. DuPont de Nemours Company states that Nylon yarn is manufactured by it and sold to various mills, where the material is made into hosiery and then dyed and finished.

"This note," the doctor says, "is made so that others may be on the lookout for similar cases and to call attention to the need, for the manufacturers, to warn the public of the possibility of reactions to this product."

While the school teacher has not more tuberculosis than the average adult, next to the family she provides the greatest opportunity for close prolonged contact with the school child. To require the teacher to provide a health certificate, including chest films, would serve to remove this reservoir of infection.—D. O. N. Lindberg, M. D., *Illinois Medical Journal,* October, 1935.